#84

SEQUENCE LISTING

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Immusol Incorporated

<120> Substantially Complete Ribozyme Libraries

<130> 016556-002910US

<140> US 10/067,956
<141> 2002-02-05

<150> US 60/093,828
<151> 1998-07-22

<150> US 09/357,741
<151> 1999-07-20

<160> 56

<170> PatentIn Ver. 2.1

<210> 1
<211> 12
<212> RNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:12 nucleotide tetraloop sequence

<400> 1
ggacuucggu cc 12

<210> 2
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer P1, 3' adeno-associated virus inverted terminal repeat (AAV-ITR) primer

<400> 2
aggaagatct tccattcgcc attcaggctg cgcaactgtt g 41

<210> 3
<211> 72
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer P2, 5' oligonucleotide with sequences for tRNAval promoter and ribozyme library genes

<220>
<221> modified_base
<222> (1)..(72)
<223> n = g, a, c or t

<400> 3
ataccacaac gtgtgtttct ctggtnnnnt tctnnnnnnn ggatcctgtt tccgcccggt 60
ttcgaaccgg gg 72

<210> 4
<211> 72
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer P3,
oligonucleotide containing ribozyme library gene
complementary to P2 oligonucleotide

<220>
<221> modified_base
<222> (1)..(72)
<223> n = g, a, c or t

<400> 4
ccccggttcg aaaccgggcg gaaacaggat ccnnnnnnna gaannnnacc agagaaacac 60
acgttgtggt at 72

<210> 5
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer P1,
5' adeno-associated virus inverted terminal repeat
(AAV-ITR) primer

<400> 5
aggagatctg cggaagagcg cccaatacgc aaaccgcctc 40

<210> 6
<211> 63
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:ligation
oligonucleotide Oligo 1

<220>
<221> modified_base
<222> (1)
<223> n = phosphorylated g

<220>
<221> modified_base
<222> (2)..(63)
<223> n = g, a, c or t

<400> 6
natccacccc ccnnnnnnna gaannnnacc agagaaacac acgttgtggt atattacctg 60
gta 63

<210> 7
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:ligation
oligonucleotide Oligo 3

<220>
<221> modified_base
<222> (1)
<223> n = phosphorylated c

<400> 7
ngggtaccag gtaatata 18

<210> 8
<211> 101
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:ligation
oligonucleotide Oligo 4

<220>
<221> modified_base
<222> (1)
<223> n = phosphorylated a

<220>
<221> modified_base
<222> (2)..(101)
<223> n = g, a, c or t

<400> 8
nattctgcag atatccatca cactggcggg gatcctcgag nnnnnnnnag aannnnacca 60
gagaaacaca cggacttcgg tccgtggtat attacctggt a 101

<210> 9
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:ligation
oligonucleotide Oligo 5

<220>
<221> modified_base
<222> (1)
<223> n = phosphorylated c

<400> 9
ntcgaggatc cccgccagtg tgatggatat ctgcag 36

<210> 10
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:ligation
oligonucleotide Oligo 6

<220>
<221> modified_base
<222> (1)
<223> n = phosphorylated g

<400> 10
ncgtaccagg taatatacca cggaccgaag tccgtgtgtt tctctggt 48

<210> 11
<211> 87
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:ligation
oligonucleotide Oligo 7

<220>
<221> modified_base
<222> (1)
<223> n = phosphorylated c

<220>
<221> modified_base
<222> (2)..(87)
<223> n = g, a, c or t

<400> 11
ngaaaccggg cggaaacagg atccnnnnnn nnagaannnn accagagaga aacacacgga 60
cttcggtccg tggtatatta cctggta 87

<210> 12
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:ligation
oligonucleotide Oligo 8

<220>
<221> modified_base
<222> (1)
<223> n = phosphorylated g

<400> 12
ngatcctgtt tccgcccggt tt 22

<210> 13
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:ligation oligonucleotide oligo 3

<220>
<221> modified_base
<222> (1)
<223> n = phosphorylated c

<400> 13
ngcgtaccag gtaatatacc acggaccgaa gtccgtgtgt ttctctgg 48

<210> 14
<211> 92
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:libbam PCR primer

<220>
<221> modified_base
<222> (1)..(92)
<223> n = g, a, c or t

<400> 14
cccccggggg atccnnnnnn nnagaavnnn accagagaaa cacacggact tcggtccgtg 60
gtatattacc tggtacgcgt ttttgcattt tt 92

<210> 15
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:EBVlibeco PCR primer

<400> 15
tggggtggga gatatcgctg ttcctta 27

<210> 16
<211> 87
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:annealing
oligonucleotide Oligo1 (underline)

<220>
<221> modified_base
<222> (1)
<223> n = phosphorylated c

<220>
<221> modified_base
<222> (2)..(87)
<223> n = g, a, c or t

<400> 16
ngcgtaccag gtaatatacc acggaccgaa gtccgtgtgt ttctctggtn nnnttctnnn 60
nnnnnggatc ctgtttccgc ccggttt 87

<210> 17
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:annealing
oligonucleotide Oligo2 (underline)

<220>
<221> modified_base
<222> (1)
<223> n = phosphorylated g

<400> 17
ntccgtggta tattacctgg ta 22

<210> 18
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:annealing
oligonucleotide Oligo3 (underline)

<220>
<221> modified_base
<222> (1)
<223> n = phosphorylated c

<400> 18
ngaaaccggg cggaaacagg 20

<210> 19
<211> 16
<212> RNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:cloned ribozyme sequence containing regions of ribozyme forming helix with target RNA

<400> 19
aaaauuuuag aagcgg 16

<210> 20
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer matching sense sequence

<220>
<221> modified_base
<222> (5)
<223> n = g, a, c or t

<400> 20
ccgcngtcaa aatttt 16

<210> 21
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer matching antisense sequence

<220>
<221> modified_base
<222> (12)
<223> n = g, a, c or t

<400> 21
aaaattttga cngcgg 16

<210> 22
<211> 56
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:RT-PCR polyT primer

<220>
<221> modified_base
<222> (56)
<223> n = g, a, c or t

<400> 22
tgttaccaat ctgaaggtgg gagctttttt ttttttttt ttttttttt tttttn 56

<210> 23
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:second round RT-PCR primer

<400> 23
tgttaccaat atgaagtggg agc 23

<210> 24
<211> 16
<212> RNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:sequence of ribozyme known to cleave PCNA mRNA

<400> 24
gagcccugag aaggcg 16

<210> 25
<211> 16
<212> RNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:ribozyme sequence tag (RST) for ribozyme known to cleave PCNA mRNA

<220>
<221> modified_base
<222> (5)
<223> n = g, a, c or u

<400> 25
cgccngucca gggcuc 16

<210> 26
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR amplification primer 5' PA flanking the ribozyme expressing cassette

<400> 26
ccgttggttt ccgtagtgta gtgg 24

<210> 27
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR amplification primer 3' PA flanking the ribozyme expressing cassette

<400> 27
gcattctagt tgtggtttgt cc 22

<210> 28
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:ribozyme G1 ribozyme sequence tag (RST) sequence

<400> 28
gccangtccc gggtt 15

<210> 29
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:ribozyme G1 ribozyme sequence used to determine RST

<400> 29
aacccggaga atggc 15

<210> 30
<211> 58
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:double stranded DNA tetraloop ribozyme gene template for PCR mutagenesis reaction

<220>
<221> modified_base
<222> (1)..(58)
<223> n = g, a, c or t

<400> 30
agaannnnac cagagaaaca cacggacttc ggtccgtggt atattacctg gtacgcgt 58

<210> 31
<211> 44
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:mutagenic oligonucleotide PCR mutagenesis reaction primer containing 5' end gene sequences including target recognition sequence

<400> 31
gatatcggat cccaacaact agaacggcac cagagaaaca cacg 44

<210> 32
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:sense RT-PCR primer for probe preparation

<400> 32
cagaagtacc tgagctcgcc agtga 25

<210> 33
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:antisense RT-PCR primer for probe preparation

<400> 33
gcaggcagtt gggcattggt gtaga 25

<210> 34
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:sense RT-PCR generated probe

<400> 34
gacccgagct ttgattgact ccgt 24

<210> 35
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:antisense
RT-PCR generated probe

<400> 35
ggtgggcatc tgcgctctag ga 22

<210> 36
<211> 43
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:biotinylated
RST primer, oligonucleotide containing RST for
PCNA ribozyme

<220>
<221> modified_base
<222> (1)
<223> n = biotinylated g

<220>
<221> modified_base
<222> (39)
<223> n = g, a, c or t

<400> 36
ncatgctcct ctagactcga ggaattcgag ccctggacna ggc 43

<210> 37
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCNA RST primer

<220>
<221> modified_base
<222> (12)
<223> n = g, a, c or t

<400> 37
gagccctgga cnaggc 16

<210> 38
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:double stranded
DNA adaptor

<400> 38
gctacagctc tccggatcca agcttgatca tgacgtaatt ctgag 45

<210> 39
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial
Sequence:adaptor-specific primer

<400> 39
agctctccgg atccaagctt gatc 24

<210> 40
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR
amplification polyG primer

<220>
<221> modified_base
<222> (25)..(36)
<223> n = i

<220>
<221> modified_base
<222> (38)
<223> n = g, a, c or t

<400> 40
gaagaattct cgaggggccg cgggnngggn ngggnngn 38

<210> 41
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR
amplification Tag-Specific Primer

<400> 41
gaagaattct cgaggggccg c 21

<210> 42
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:GUC hairpin ribozyme-encoding gene subsequence

<220>
<221> modified_base
<222> (1)..(18)
<223> n = g, a, c or t

<220>
<221> modified_base
<222> (1)..(4)
<223> n = g, a, c or t, n at positions 1-4 may be present or absent

<400> 42
nnnnnnnnnn agaannnn 18

<210> 43
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:degenerate primer based on known RSTs

<220>
<221> modified_base
<222> (1)..(19)
<223> n = g, a, c or t

<400> 43
rrrrngtcrr rrrrrnnnn 19

<210> 44
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:(GGGII)-3 Primer

<220>
<221> modified_base
<222> (1)..(15)
<223> n = i

<400> 44
gggnngggnn gggnn 15

<210> 45
<211> 46
<212> RNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:hairpin ribozyme

<220>
<221> modified_base
<222> (1)..(46)
<223> n = g, a, c or u

<400> 45
nnnagaannn naccagagaa cacacguugu gguauauuac cuggua 46

<210> 46
<211> 11
<212> RNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:self-cleaved auto-catalytic ribozyme sequence

<220>
<221> modified_base
<222> (1)..(11)
<223> n = g, a, c or u

<400> 46
uacccccnnb n 11

<210> 47
<211> 15
<212> RNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:self-cleaved auto-catalytic ribozyme sequence

<220>
<221> modified_base
<222> (1)..(15)
<223> n = g, a, c or u

<400> 47
nnnnnnnaga avnnn 15

<210> 48
<211> 15
<212> RNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:portion of charged ribozyme ligated to cleavage product

<220>
<221> modified_base
<222> (1)..(15)
<223> n = g, a, c or u

<400> 48
nnnbngucnn nnnnn 15

<210> 49
<211> 21
<212> RNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:trans-ligated ribozyme, target specific ribozyme

<220>
<221> modified_base
<222> (1)..(21)
<223> n = g, a, c or u

<400> 49
uacccccnnb ngucnnnnnn n 21

<210> 50
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:P3 ribozyme sequence

<400> 50
nnnnnnnntc ttnnnn 16

<210> 51
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:P2 ribozyme sequence

<400> 51
nnnnaagann nnnnnn 16

<210> 52
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:P2 + P3 ribozyme cloning sequence

<400> 52
nnnnttctnn nnnnnn 16

<210> 53
<211> 71
<212> RNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:5' SL-1
auxiliary sequence

<400> 53
gcacuauggg cgcagcguca augacgcuga cgguacaggc cagacaauua gugucuuggu 60
auagugcgag g 71

<210> 54
<211> 12
<212> RNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:5' tetra-loop
auxiliary sequence

<400> 54
ggacaauggu cc 12

<210> 55
<211> 101
<212> RNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:ribozyme
containing 5' tetra-loop, 3' tetra loop and
auto-catalytic sequence

<400> 55
ggacaauggu cccacgacac aacaagaagg caaccagaga aacacacguu gugguauauu 60
accugguacg cguccuggga acaggugccc gucuguugug u 101

<210> 56
<211> 160
<212> RNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:ribozyme
containing 5' SL-1, 3' tetra-loop and
auto-catalytic sequence

<400> 56
gcacuauggg cgcagcguca augacgcuga cgguacaggc cagacaauua gugucuuggu 60
auagugcgag gcacgacaca acaagaaggc aaccagagaa acacacguug ugguauauua 120
ccugguacgc guccugggaa caggugcccg ucuguugugu 160